

**UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION**

**Standardizing Generator Interconnection
Agreements and Procedures**

Docket No. RM02-1-000

**JOINT COMMENTS ON THE INTERCONNECTION NOPR
OF MULTIPLE PUBLIC INTEREST ORGANIZATIONS¹**

June 17, 2002

Introduction

Following an Advance Notice of Proposed Rulemaking (**ANOPR**) process that was initiated in October, 2001 to develop standardized interconnection agreements and procedures, the Commission issued on April 24, 2002 its Notice of Proposed Rulemaking (**NOPR**) in this docket. The NOPR proposes a standard interconnection agreement (**IA**) and standard interconnection procedures (**IP**) to be made part of existing and future open access transmission tariffs (**OATTs**), and the proposed IA and IP were based, in part, on the “consensus documents” filed by parties at the conclusion of the ANOPR process.

On February 1, 2002, 16 groups representing small generators and public interest organizations filed comments on the ANOPR and “consensus documents” requesting that the Commission incorporate the small generator caucus position into the standards for interconnection of small generating units. The small generator caucus position included detailed rules for the interconnection of generators smaller than 20 Megawatts (MW). Although the

¹ The 19 public interest and other groups joining these comments include the American Wind Energy Association, Bergey Windpower Co., Citizen Power, Inc., Citizens for Pennsylvania’s Future, Clean Air Council, Conservation Services Group, CSGServices, Inc., Izaak Walton League of America, Massachusetts Energy Consumers Alliance, Massachusetts Public Interest Research Group, Minnesotans for an Energy-Efficient Economy, Natural Resources Defense Council, New England Renewable Power Producers

NOPR states that small generator interconnection requests should receive different and expedited treatment, it does not adequately detail the IP and IA provisions that would be appropriate for small generators. Thus, it does not resolve the problems currently faced by power customers who would install those resources if they were given a reasonable chance. Unless those problems are effectively addressed in the Final Rule, the Commission's standard interconnection procedures will not facilitate the interconnection of distributed renewable and other small generators, and the wholesale marketplace will not benefit from the economic, reliability and environmental values of these resources.

The groups joining this comment ("**Joint Commenters**") are state, regional and national environmental, consumer, and renewable energy organizations and companies with strong interests in distributed power production technologies and their ability to deliver electricity reliably and efficiently with minimal impacts on the environment. Thus, Joint Commenters are greatly concerned that the proposed interconnection rule fails to provide appropriate standard interconnection procedures and agreements for smaller, customer-owned generating units, and we urge Commission adoption of the small generation IPs and IAs recommended below in the Final Rule issued in this proceeding.

In addition to the recommendations provided in this document, Joint Commenters urge Commission reconsideration of the February 1, 2002 Small Generator and Public Interest Groups' comments on the ANOPR. Further, we note our strong support of the comments and recommendations filed today in this docket by the Solar Energy Industries Association, et al.

(“SEIA”) and the U.S. Combined Heat and Power Association, et al. (“USCHPA”), and we recommend Commission adoption of the IPs and IAs proposed in and appended to those comments.

Summary of Comments and Recommendations

Although standard interconnection requirements are needed across the nation for all types of generators, such requirements are critical to small generators that typically have minimal ability to deal with uncertainty and economic risk. In fact, generators under 2MW will be unable to participate in competitive markets unless simple, inexpensive and expedited interconnection requirements are mandated by the Commission.

Because the system impacts of, and technical requirements for, interconnections of under 2MW generators are fundamentally different than for larger facilities, the Final Rule should provide detailed interconnection procedures and agreements that are appropriate to the size of these units and that expedite their interconnection to the grid. Under 2MW units have little or no grid impact, and they have a long history of safe and reliable service all across the nation. In addition, they contribute major economic and reliability benefits to electricity grid, reducing system costs and increasing wholesale competition.

To assure appropriate treatment of these resources, Joint Commenters urge that the Commission incorporate in its Final Rule the standard IP and IA for small generators proposed in the comments of SEIA, et al. in this docket. These documents are based on the successful Texas model, and they contain appropriate procedures and requirements for safe and reliable grid interconnection of generators under 2MW.

The Final Rule in this docket must also include a detailed IP and IA for generating units

between 2MW and 20MW. Because the grid impacts of 2 to 20MW are significantly different than those of larger units, the Commission should adopt a different IP and IA for such facilities. Many procedures required to interconnect large central power stations to the grid are unnecessary for smaller units, and requiring such procedures to be followed would impose unreasonable burdens on smaller units. Thus, Joint Commenters urge the Commission to adopt an approach for these units similar to that which PJM uses for small generator interconnections.

The PJM approach allows small generators with no grid impact to proceed quickly through the interconnection process, avoiding unnecessary and costly studies. In cases in which potential grid problems are seen, more detailed studies are required. Using PJM's approach as a model, USCHPA, et al. has proposed IP and IA documents in its comments that are appropriate for units of 2 to 20 MW. Thus, Joint Commenters strongly urge the Commission to adopt the IP tariff language and IA document appended to the USCHPA comments filed today in this docket.

I. The Final Rule Must Include Detailed Interconnection Procedures and Agreement Provisions Appropriate For Generating Units Under 2 MW.

While standard interconnection requirements are needed across the nation for all types of generators, both to reduce market entry barriers and to foster open, competitive wholesale power markets, such requirements are critical to small generators that typically have minimal ability to deal with uncertainty and economic risk. Unclear, complicated or costly interconnection procedures create an insurmountable barrier to small generation. In fact, small generators will be unable to participate in regional markets unless appropriately simple, inexpensive and expedited interconnection requirements are mandated by the Commission.

Further, standardized interconnection requirements are important for the manufacturers of small generators if small distributed generation resources are to become a viable part of the wholesale electricity marketplace. Not only would a national standard assure that interconnections to FERC jurisdictional facilities can proceed without delay, but it would also serve as a model for states that have not yet promulgated rules for state jurisdictional interconnections.

A. Size makes a difference: generators under 2MW have little, if any, grid impact, have a long history of safe and reliable operations, and contribute major economic and reliability benefits to electric power markets.

The procedures and agreements required to integrate large central power stations into the transmission grid make no sense for <2 MW units. They are neither necessary nor useful to assure proper interconnections of such units, and their imposition would assure that customer-owned under 2MW generators are not added to the system.

1. The system impacts of, and technical requirements for, <2MW unit interconnections are fundamentally different than for larger units.

As the comments filed by SEIA, et al. in this docket clearly demonstrate, marginal interconnection of <2MW resources to the grid has little or no impact on system reliability or power quality. In fact, many packaged power systems have all of the necessary safety and power quality equipment built into the generators, and the equipment meets national engineering standards.

2. Customers capable of adding <2MW distributed generating units to the grid have very limited resources and little ability to deal with interconnection uncertainties and generation risks.

Customers likely to add small distributed generators to the system usually are not in the business of power production. Thus, they typically have very limited sophistication regarding

interconnection issues, minimal resources to pursue interconnection procedures, and very little capacity for handling economic uncertainty and risks related to bringing such units on line. It is critical, therefore, that procedures be simple and straight-forward and that risks are minimal.

3. Under 2MW generating units which have been interconnected to the grid via simple procedures and agreements have a long history of safe and reliable operation.

Under the interconnection rules of many states, thousands of small generating units have been installed without lengthy, costly procedures, and they are currently operating safely and efficiently. Texas, California and the PJM states provide ample history of the successful incorporation of these units into the grid.

4. Interconnection of <2MW distributed generating units to the grid would enhance system reliability, increase economic efficiency, and mitigate market power, thereby improving wholesale competition.

If standard expedited interconnection rules are promulgated for small generators, these facilities will be able to provide substantial benefits in emerging electricity markets. For example, small generators can be quickly sited and constructed in load pockets, and they can rapidly diminish local market power problems. Since their incremental addition to the grid is very small, the risks of adverse impacts on grid operations are also minimal. If a small generator is sited near customers with heating needs, the generator may be able to offer combined heat and power efficiencies that surpass virtually any other generation technology. Moreover, most renewable energy generators—facilities that minimize the emissions associated with electricity production—fall into the small generator category.

In order for small generators to provide these benefits, simple, clear, streamlined interconnection rules and procedures are critical. Leaving interconnection rules to non-

independent system operators assures that needless barriers to market entry will continue to the detriment of wholesale competition and the viability of this market segment.

The Commission should reject jurisdictional arguments against adopting federal standards for small generator interconnections. Such arguments, in effect, urge the Commission not to exercise jurisdiction over FERC jurisdictional interconnections, a result that would leave small generators in many parts of the country to negotiate with generation-owning transmission providers without regulatory guidelines.

B. The Final Rule must include standard IP provisions that expedite <2MW generator interconnection and a model IA that is appropriate for such units, and the Commission should, therefore, adopt the model IP and IA proposed in the comments of SEIA, et al. in this docket.

Interconnection procedures for units under 2 MW do not require rigorous, costly interconnection studies because they typically have minimal or no impact on the grid. In addition, small units that can be brought on line quickly should not be required to await the completion of studies for large units or transmission upgrades that may be necessary for large units. When neither detailed studies nor transmission upgrades are needed for safe and reliable interconnection of a small generator, it is pointless and detrimental to the marketplace to make the interconnection contingent on completion of studies or facilities needed for larger units.

1. Simple and streamlined interconnection requirements must be established by the Commission for connecting small packaged and under 2 MW generators to the transmission system.

Simple and streamlined interconnection processes are appropriate for generators designed and manufactured for interconnected operation that contain within the units all the protective equipment needed for interconnection. Provided these units represent a small portion

of the total resources on the grid to which they are interconnecting, their interconnection can be considered sufficiently simple (and insignificant) that virtually no interconnection studies are required.

The interconnection of these units is, in effect, a “plug and play” arrangement, and the only legitimate concern of an interconnecting transmission owner is whether such units together constitute more than a small portion of the system—e.g., fifteen percent of the peak load on the circuit to which interconnection would be made. Such a limit would assure that an interconnection would have little or no impact on the system. Thus, the provisions for under 2 MW units should contain a strong but rebuttable presumption that their interconnection will be approved.

For small generators meeting the specified criteria, interconnection studies are seldom, if ever, warranted. If transmission owners want to conduct studies, they may do so—but not at the small generator’s expense. On the other hand, if the interconnection of a small generator would cause safety or reliability problems, it should not be approved without an appropriate study. However, there should be a strong presumption against such problems when the small generator meets the stringent criteria proposed in these comments.

For small packaged and micro generation units it is not appropriate to require that they have an occupied control center; nor is network modeling of power flows required; and unit commitment schedules are unnecessary. Most, if not all, such units are designed to operate remotely without on-site monitoring. Many will rely upon renewable energy resources and operate only when the renewable resource is available. Many small units will be located at a customer’s site, generating combined heat and power and operating only when the customer

needs heat. Requiring small generators to meet obligations that only make sense for larger facilities would impose unnecessary costs on customers and serve only to limit market entry of these resources.

For small packaged generation units (below 2MW but above 250 kW), metering requirements should be limited to hourly integrated meters that measure generation output—the approach used by PJM for certain small generators. For micro generators (those below 250 kW), even hourly meters may be too costly. Thus, the interconnection rules should allow use of other measuring technologies (such as have been approved in New York for ISO load response programs) for these small generators.

To resolve disputes over studies and other small generator interconnection issues, the Commission should require alternative dispute resolution procedures and make their results binding. Without a simple, low cost dispute resolution process, a streamlined IP may be illusory; and without Commission adoption of standard interconnection provisions for the under 2 MW units, streamlined interconnections will not happen in many parts of the country.

2. Joint Commenters urge Commission adoption in the Final Rule of the model IP and IA documents appended to the comments filed by SEIA, et al. in this docket.

Because the model documents proposed in the comments of SEIA, et al.² contain appropriate interconnection procedures and requirements for generators under 2 MW, in effect advancing the policies supported by the public interest group signatories to this pleading, Joint Commenters urge the Commission to incorporate those documents in its Final Rule on

² “Joint Comments of Solar Energy Industries Association, the U.S. Fuel Cell Council, and the American Solar Energy Society on Notice of Proposed Rulemaking (18 CFR Part 35),” June 17, 2002, Attachments A

generation interconnection. Adoption of the model IP and IA will help to assure that small, distributed generators become a significant force in wholesale power markets and thereby enhance the reliability and efficiency of our electricity system.

II. The Final Rule Must Also Include Detailed Interconnection Procedures and Agreement Provisions Appropriate For Generating Units From 2 to 20MW.

Joint Commenters join with other supporters of under 20MW renewable and clean generation resources and endorse the comment filed today in this docket by USCHPA, et al. In addition, we urge Commission adoption of the IP and IA documents proposed by USCHA which are based on the proven PJM approach to small unit interconnection.

A. Because the grid impacts of small generators ranging from 2 to 20 MW are significantly different than those of larger units, the Commission should adopt a different standard IP and IA for the smaller facilities.

Many of the procedures and agreements required to interconnect central power stations are unnecessary for units ranging from 2 to 20MW. Because such requirements would impose unreasonable burdens on smaller units, they should be modified to make safe interconnection as expeditious as possible.

This is the logic of PJM's current small resource interconnection procedures. Under the PJM approach, in-depth interconnection studies are not required if it is clear that a small unit's interconnection will have little or no impact on the grid. If an initial analysis indicates potential problems, however, more detailed studies are undertaken.

The PJM approach allows small generators that have no grid impact to proceed quickly and avoid needless and costly interconnection studies. Thus, small units can be interconnected

and participating in the markets well ahead of the more complex larger units. The speed of this process can greatly benefit markets, especially those with market power problems. Conducting detailed studies on the few interconnections that could be problematic would, of course, be important for reliable grid operation.

Without clear, expedited procedures, many small generators face the prospect of costly detailed analyses of their requests for interconnection. If detailed procedures are not adopted by the Commission, under the guise of good utility practice, transmission owners can require small generators to pay for the in-depth studies required for larger units which, when completed, show that the interconnection will have no real impact on the grid. Because such analyses are costly and time consuming, it is easy to see how the interconnection process can be used to dissuade small generators from interconnecting.

By specifying the PJM approach as the appropriate national standard for 2 to 20 MW generators, Joint Commenters hope to assure that transmission operators eliminate costly detailed interconnection studies that are not necessary. Many interconnection studies can and should be waived unless there is an identified specific need for more detailed analysis.

Following the PJM approach, Joint Commenters suggest that smaller generation interconnection requests could be handled in the same queue as larger unit requests, but that they should be expedited through the interconnection process as study requirements are waived. Small units may thus be ready to sign interconnection agreements well ahead of larger units higher in the queue.

An example of appropriate requirements modification found in the PJM process is the option of submitting for study only the net export component of the small generator's capacity.

Because many small units meet on-site load with part of their generation, they export only a portion of the unit's total capacity. Provided the small generator agrees to comply with operating restrictions that limit total export, only the portion of the unit that interacts with the grid should be considered for study.

B. Joint Commenters urge Commission adoption in its Final Rule of the model IP tariff language and IA document appended to the comments filed by USCHPA, et al. in this docket.

The USCHPA proposes IP tariff language and an IA document based on the PJM approach to connecting generators under 10MW, an approach which is both workable and appropriate for generators of 2 to 20MW.³ As USCHPA properly notes, all generators of less than 20MW will not have similar grid impacts—impacts will vary depending on the size of the unit, its location on the system, and its manner of operation. Thus, the studies required for interconnection of these units will vary, and the interconnection procedures must be flexible enough to accommodate the differences.

Because smaller units will likely have smaller impacts on the grid and, as a result, need less detailed and costly studies to support their interconnection, the standard IP and IA attached to the NOPR are not appropriate for their interconnection. The procedures and agreements proposed in the NOPR impose significant transaction costs on generators, and imposing those costs on small generators would make it all but impossible for most of them to interconnect economically. Thus, USCHPA developed alternative procedures and agreements based on the PJM model which are more appropriate for units under 20MW, and Joint Commenters urge the

³ "Comments of the U.S. Combined Heat and Power Association and the International District Energy Association on Proposed Rule," June 17, 2002, Attachments A and B.

Commission to incorporate the alternative IP and IA in the Final Rule on generator interconnection.

III. New generators seeking expedited interconnection under national small generator procedures should be required to meet appropriate environmental standards.

A. To receive expedited interconnection treatment a small generator should be required to show that it will meet appropriate environmental standards.

Utility sector environmental regulations, most of which were adopted long before industry restructuring began, can create significant market distortions. The grandfathering of existing generation plants under the Clean Air Act, for example, results in inconsistent air quality requirements for older and newer facilities. In general, existing power plants are subject to less stringent pollution standards than new ones, and owners of existing plants are allocated free pollution rights that may not be easily available to new entrants. These differences can distort electric power markets and hinder development of a truly competitive industry.⁴

As the Commission moves to facilitate the interconnection of small generators it should assure that expedited treatment is reserved for generators meeting environmental standards comparable to those imposed on larger generators seeking interconnection. The market distortions resulting from disparate treatment of existing and new large generators should not be worsened by allowing inconsistent environmental standards to apply to small distributed units.

B. It is critical that FERC policies to facilitate interconnection of small generation resources not reduce environmental quality.

The Commission has taken major steps to assure that the potential economic benefits from open, non-discriminatory transmission access and greater regional coordination of the grid

⁴ See "Electricity Market Distortions Associated With Inconsistent Air Quality Regulations," Synapse

are realized by consumers. Standardized interconnection requirements that make it easy for small generators to participate in the wholesale marketplace should greatly enhance these benefits, but the benefits should not be gained at the expense of air quality or other environmental values.

The environmental implications of significant small generator participation in wholesale markets is complex, difficult to evaluate, and not yet well understood. Such participation, for example, could create significant new incentives to operate existing highly polluting customer-sited generation. Conversely, customer-sited generation that makes use of combined heat and power or renewable resources will produce substantially less pollutants per unit of generation and should be encouraged by Commission policies.

Appropriate environmental regulation of small generators is critical—both to minimize potential environmental damage and to ensure that the resources compete on a level playing field with new and exiting central station facilities. Environmental regulators would benefit from the support of the Commission as they establish emissions standards and environmental permitting procedures for small generators to be used in competitive wholesale electric markets. Until such standards are in place, however, the most direct way to avoid environmental damage from highly polluting small generators and minimize their unfair competitive advantage would be simply to exclude them from participation in Commission regulated markets, except when needed by the grid operator to meet system emergencies. Joint Commenters urge Commission consideration of this approach.

Requested Relief

Based on the record in this docket, including the ANOPR process and comments in response to the NOPR, Joint Commenters urge the Commission to incorporate the IPs and IAs proposed in the comments filed today by SEIA, et al. and USCHPA, et al. into the Final Rule on interconnection. If, after reviewing comments, the Commission finds there are technical issues that remain to be resolved related to the proposed IPs and IAs, Joint Commenters ask that the Commission immediately schedule a technical conference focused on those issues and invite parties to file additional comments on them within 30 days after the conference.

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